

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : FURUKAWA SEISAKUSHO:KK

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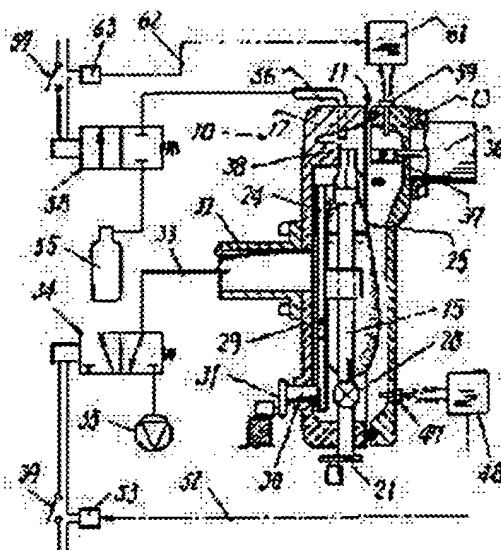
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## (54) PRESSURE CONTROL METHOD FOR VACUUM PACKAGING MATERIAL

(57)Abstract:

PURPOSE: To control pressure only by means of a scanner when the kind of an item to be packaged is changed without setting pressure using a key board of a microcomputer.

CONSTITUTION: In a vacuum packaging device wherein the air in a tightly closed chamber 10 is removed by the sucking action of a pump 35 to tightly seal an item to be packaged put in a bag 25 under vacuum, the amount of liquid of the item is indicated beforehand on the surface of the bag 25 by means of bar code so that information recorded by bar code is read out by a scanner before packaging, which information is inputted into a controller 48. When the internal pressure of the chamber 10 detected by a pressure sensor 47 conforms with the information having been processed by the controller 48, a switch 53 is opened by means of a signal sent via an electric circuit 52, and hence a solenoid switch valve 34 cuts off a vacuum suction line 33. As a result, vacuum value in the chamber 10 can be made to conform with the information recorded on the bag by bar code.



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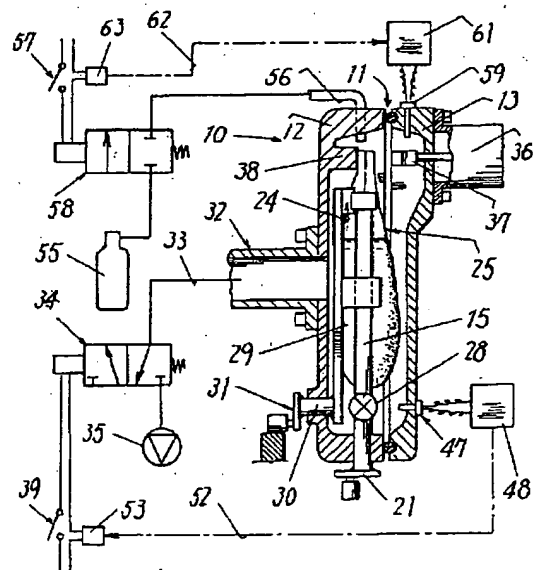
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(54) 【発明の名称】 真空包装体の圧力制御方法

(57) 【要約】

【構成】 密閉状チャンバー(10)内の空気をポンプ(35)の吸引作用で排除し、袋(25)に収容した被包装物を真空環境下で密封するようにした真空包装装置において、前記袋(25)の表面に予め被包装物の液量をバーコードで表示しておき、包装に先立って前記バーコードに記録されている情報をスキャナーで読み取って制御器(48)に入力する。圧力センサー(47)で検出されるチャンバー(10)の内圧と、先に制御器(48)で処理されている情報とが一致すると、電気回路(52)を介して送られる信号でもってスイッチ(53)を開放するので、電磁切換弁(34)は真空吸引ライン(33)をカットする。結果としてチャンバー(10)内の真空値を袋にバーコードによって記録してある情報と一致させることができる。

【効果】 被包装物の種類を変えたとき、マイクロコンピュータのキーボードで圧力設定を行うことなく、スキャナーだけで圧力制御を行うことができる。



## 【特許請求の範囲】

【請求項1】 密閉状チャンバー内の空気を排除し、該チャンバー内の真空環境下で、被包装物を収容した容器の開口部をシールするようにした真空包装装置において、前記容器に記録されている識別情報を予めセンサーで読取り、中央演算部に入力される前記読取り情報と、記憶装置に記録されている情報とを照合して前記識別情報に対応する記憶情報を出力し、該出力情報と前記チャンバーから排除される空気圧力とを対比し、チャンバー内の真空圧力が前記識別情報と一致するように制御する方法。

【請求項2】 密閉状チャンバー内の空気を排除したあと不活性ガスを注入し、該チャンバー内の不活性ガス環境下で、被包装物を収納した容器の開口部をシールするようにしたガス包装装置において、前記容器に記録されている識別情報を予めセンサーで読取り、中央演算部に入力される前記読取り情報と、記憶装置に記録されている情報とを照合して前記識別情報に対応する記憶情報を出力し、該出力情報と前記チャンバー内の圧力とを対比し、チャンバー内の不活性ガス圧力が前記識別情報と一致するように制御する方法。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】 本発明は、気密な密閉チャンバー内において被包装物を包装材料をもって密封包装するに当たり、包装材料内の気体圧力例えば真空圧力或いは不活性ガス圧力を任意に設定する制御方法に関する。

## 【0002】

【従来技術】 被包装物を収容した包装用の袋を気密な耐圧チャンバーで囲んだあと、前記耐圧チャンバー内の空気を強制排除すると共に、前記袋の開口縁を密封すると、俗に云う真空包装体を形成することができ、また前記袋内に不活性ガスを注入するとガス包装体を形成することができる。この場合、真空圧を必要以上に上げ過ぎると、チャンバー内で被包装物に含まれている液体が沸騰したり、密封後の包装体内部の柔軟な被包装物が圧力差によって押し潰されたりし、またガス包装体の場合は過多不活性ガスにより袋内の食品の味が変化したりする。そこで従来は、耐圧チャンバー内の気体圧力を圧力センサーで測定し、該圧力センサーをもって耐圧チャンバー内の真空圧或いはガス圧を制御するようにしている。

## 【0003】

【発明が解決しようとする課題】 しかし前記の従来例では、包装する被包装物の物性に合わせて予め圧力センサーの設定圧の調整をしておく必要があり、従って被包装物が変わるたびに、被包装物に対応する設定値を記録帳から選び出して圧力センサーに調整を施さなければならない煩わしさがあった。

## 【0004】

【課題を解決するための手段】 本発明は、被包装物に合わせてその都度作業員が圧力センサーを調整する必要がないように、密閉状チャンバー内の空気を排除し、該チャンバー内の真空環境下で、被包装物を収容した容器の開口部をシールするようにした真空包装装置において、前記容器に記録されている識別情報を予めセンサーで読取り、中央演算部に入力される前記読取り情報と、記憶装置に記録されている情報とを照合して前記識別情報に対応する記憶情報を出力し、該出力情報と前記チャンバーから排除される空気圧力とを対比し、チャンバー内の真空圧力が前記識別情報と一致するように制御する。

【0005】 また別の方法は、密閉状チャンバー内の空気を排除したあと不活性ガスを注入し、該チャンバー内の不活性ガス環境下で、被包装物を収納した容器の開口部をシールするようにしたガス包装装置において、前記容器に記録されている識別情報を予めセンサーで読取り、中央演算部に入力される前記読取り情報と、記憶装置に記録されている情報とを照合して前記識別情報に対応する記憶情報を出力し、該出力情報と前記チャンバー内の圧力とを対比し、チャンバー内の不活性ガス圧力が前記識別情報と一致するように制御する。

## 【0006】

【実施例】 図1に示すチャンバー(10)は境界面(11)から二つに分割可能な本体(12)と蓋材(13)とにより構成する。図2のごとく前記本体(12)の内部に2本のパイプ(14)(15)を柱状に立設し、これら各パイプの先端にそれぞれ可動爪(16)(17)を設けると共に、前記両パイプ(14)(15)の下端を本体(12)の下面に突き出し、下端に固定したレバー(20)(21)の間をリンク(22)を介して連結している。一側のレバー(21)と本体(12)とを継ぐコイルスプリング(18)の引張力で前記可動爪(16)(17)が固定爪(23)(24)に圧接し袋(25)の両側縁を挾持するが、ピンロール(26)に矢印(27)のような力を作用させ、コイルスプリング(18)を引き伸ばすことによって可動爪(16)(17)は固定爪(23)(24)から離れる。また一側のクランプ用パイプ(15)の中間にユニバーサルジョイント(28)を介設する一方、上端に固定爪(24)を形成する縦長なプレート(29)の下端に、前記ユニバーサルジョイント(28)と同芯で形成した揺動用軸(30)を本体(12)に支持し、該軸の外側にレバー(31)を設けている。前記レバー(31)に作用する力でプレート(29)を傾け、パイプ(15)をユニバーサルジョイント(28)から折り曲げて両可動爪(16)(17)の間隔を相対的に接近させたり離したりすることにより、袋(25)の上部の開口縁は広がり、また緊張したりする。

【0007】 本体(12)の垂直壁に固定した角筒状通路(32)に連結するライン(33)は電磁切換弁(34)を介して真空用ポンプ(35)に連結しており、電源スイッチ(39)の閉塞で電磁切換弁(34)を作動されると、前記ポンプ(35)によって密閉状チャンバー(10)内の空気が排除され、そのあと蓋材(13)に固定したアクチュエータ(36)でシールバー

(37)をシール台(38)の方向に押出し、袋(25)の上縁開口部を加熱シールすることにより、図5に示すような真空包装体(40)を形成することができる。

【0008】図3に示すように使用する容器(25)の表面には予めバーコードなどによる識別情報(41)を表示しており、チャンバー内の真空圧を制御する場合は図4のスキヤナー(42)で前記識別情報(41)を読み取ることから始められる。すなわち、前記識別情報(41)は、袋(25)に充填される被包装物の種類に対応する真空度や充填液量などに応じた制御度を記録しており、識別情報(41)の内容が変化するたびに当該識別情報を予めスキヤナーセンサ(24)で読み取り、この読み取り情報を中央演算部(43)に入力する。記憶装置(44)は予め多種類の制御を想定した多数の情報を記憶しており、中央演算部(43)に入力した前記の読み取り情報は、記憶装置(44)における記録情報と照合され、記憶装置(44)から前記識別情報(41)に対応する情報が引き出され先ず制御部(45)に出力(46)する。

【0009】一方、図3の前記識別情報(41)と一致するような被包装物を充填した袋(25)を図1のチャンバー(10)内に配置し、ポンプ(35)でチャンバー(10)内の空気排除を開始すると、蓋材に支持した圧力センサー(47)はチャンバー内の次第に減少する圧力値を制御器(48)に送り続ける。該制御器は図4に示すように、圧力センサー(47)から入力する真空チャンバー(10)内の圧力と、制御部(45)から入力する情報とを対比する手段(50)を備え、この対比値が一致すると、真空圧調整手段(51)を介して弁(34)に信号を送り、チャンバー(10)とポンプ(34)との連結をカットする。つまり図1の実施例においては制御器(48)から指令信号(52)でスイッチ(53)を開放し、切換弁(34)をノーマルな状態に切替えるので、チャンバー(10)内の圧力は袋に表示した識別情報と一致した状態で停止する。

【0010】図1に示すようにチャンバー本体にはガスポンプ(55)に通ずるノズル(56)を設けている。真空吸引が完了すると電源スイッチ(57)の開路で電磁切換弁(58)が作動すると、ポンプ(55)内の不活性ガスはチャンバー(10)内に注入される。予め図4のスキヤナー(42)で図3の識別情報(41)を読み取っておくと、チャンバー内のガス圧は識別情報と一致するように制御される。すなわ \*

\*ち、チャンバー(10)に設けた圧力センサー(59)によって検出されるガス圧と、真空圧制御と同じように制御部(45)から送られてくる情報との対比値が一致したとき、対比手段(50)からガス圧調整手段(60)を介して弁(58)に送信される信号でもって、チャンバー(10)と不活性ガス源(55)との連結がカットされる。つまり図1では制御器(61)からの指令信号(62)でスイッチ(63)を開放し、電磁切換弁(58)をノーマルな状態に切り替える。袋へのガス充填量の大小によって、袋の膨脹具合や、食品の味に変化がでるため、前記制御でもって図6の袋(25)内へのガス充填量を調整制御する。

【0011】

【効果】本発明は、包装に先立って、包装用の容器に記録されている識別情報をセンサーで読み取り、この読み取り情報によって前記容器に影響する真空圧又は不活性ガス圧を制御するものであり、従来のように被包装物の種類や質量が変わったとき記録帳から選出したデータをコンピュータなどの制御手段にインプットする方法に比べ、圧力制御値が自動的に設定されるので便利で煩わしさを解消できる。

【図面の簡単な説明】

【図1】 側面視の断面図。

【図2】 前図の本体の正面図。

【図3】 容器の正面図。

【図4】 ブロック図による説明図。

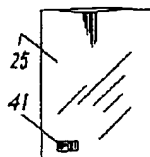
【図5】 真空包装体の説明図。

【図6】 ガス包装体説明図。

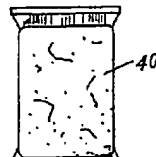
【符号の説明】

- |         |         |         |         |         |        |
|---------|---------|---------|---------|---------|--------|
| (10)... | チャンバー   | (25)... | 袋       | (34)... | 電磁切換弁  |
| (35)... | ポンプ     |         |         |         |        |
| (37)... | シールバー   | (41)... | 識別情報    | (42)... | スキヤナー  |
| (43)... | 中央演算部   | (44)... | 記憶装置    |         |        |
| (45)... | 制御部     | (47)... | 圧力センサー  | (48)... | 制御器    |
| (50)... | 対比手段    | (51)... | 真空圧調整手段 |         |        |
| (55)... | ガスポンプ   | (58)... | 電磁切換弁   | (59)... | 圧力センサー |
| (60)... | ガス圧調整手段 | (61)... | 制御器     |         |        |

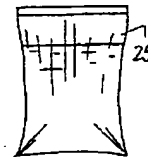
【図3】



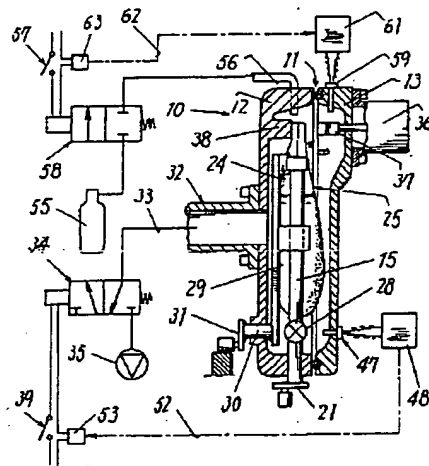
【図5】



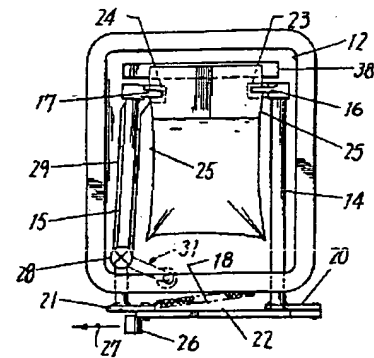
【図6】



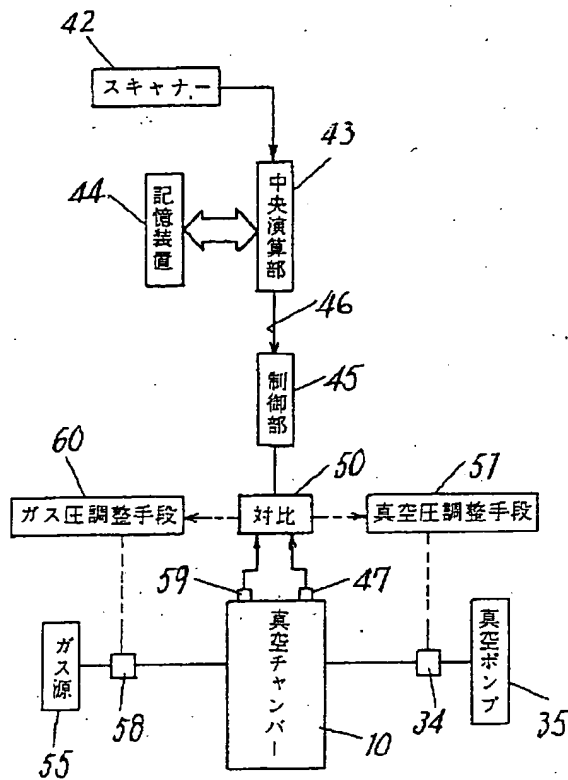
【図1】



【図2】



【図4】



【公報種別】特許法第17条の2の規定による補正の掲載  
 【部門区分】第2部門第6区分  
 【発行日】平成13年3月21日(2001.3.21)

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 【年通号数】公開特許公報7-615  
 【出願番号】特願平5-235487  
 【国際特許分類第7版】

B65B 31/02  
 57/00

【FI】

B65B 31/02  
 57/00

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【手続補正書】

【提出日】平成12年7月5日(2000.7.5)

【手続補正1】

【補正対象書類名】明細書

【補正対象項目名】特許請求の範囲

【補正方法】変更

【補正内容】

【特許請求の範囲】

【請求項1】 密閉状チャンパー内の空気を排除し、該チャンパー内の真空環境下で、被包装物を収容した容器の開口部をシールするようにした真空包装装置であって、前記容器に表示する識別情報をセンサーで読み取り、この読み取り情報と、前記真空チャンパー内の真空値とが一致するように制御器が作用する圧力制御方法。

【請求項2】 読み取り情報と、真空チャンパー内の真空値とが一致するように、制御器でもって行なうコントロールを、前記容器に記録した識別情報をセンサーで読み取って中央演算部に入力する工程と、前記中央演算部において前記入力情報と、記憶装置に記録されている情報とを照合して前記入力情報に対応する記憶情報を出力する工程と、前記出力情報と、空気排除に伴う前記チャンパー内の変化圧力値とを対比し、チャンパー内の真空圧力が前記識別情報と一致した時点で空気排除をカットする工程とによって行なう請求項1に記載の制御方法。

【請求項3】 密閉状チャンパー内の空気を排除したあと不活性ガスを注入し、該チャンパー内の不活性ガス環境下で、被包装物を収容した容器の開口部をシールするようにした真空包装装置であって、前記容器に表示する識別情報をセンサーで読み取り、この読み取り情報と、前記真空チャンパー内の不活性ガス圧値とが一致するように制御器が作用する圧力制御方法。

【請求項4】 読み取り情報と、真空チャンパー内の不活性ガス圧値とが一致するように、制御器でもって行なうコントロールを、容器に記録した識別情報をセンサーで読み取って中央演算部に入力する工程と、前記中央演算部において前記入力情報と、記憶装置に記録されている情報とを照合して前記入力情報に対応する記憶情報を出力する工程と、前記出力情報と、不活性ガス注入に伴う前記チャンパー内の変化圧力値とを対比し、チャンパー内の不活性ガス圧力が前記識別情報と一致した時点で不活性ガス注入をカットする工程とからなる請求項3に記載の圧力制御方法。

【手続補正2】

【補正対象書類名】明細書

【補正対象項目名】0009

【補正方法】変更

【補正内容】

【0009】一方、図3の前記識別情報41と一致するような被包装物を充填した袋25を図1のチャンパー10内に配置し、ポンプ35でチャンパー10内の空気排除を開始すると、蓋材に支持した圧力センサー47はチャンパー内の次第に減少する圧力値を制御器48に送り続ける。該制御器は図4に示すように、圧力センサー47から入力する真空チャンパー10内の圧力と、制御器45から入力する情報とを対比する手段50を備え、この対比値が一致すると、真空圧調整手段51を介して弁34に信号を送り、チャンパー10とポンプ35との連結をカットする。つまり図1の実施例において制御器48から指令信号52でスイッチ53を開放し、切換弁34をノーマルな状態に切り替えるので、チャンパー10内の圧力は袋に表示した識別情報と一致した状態で停止する。

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CLAIMS

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## [Claim(s)]

[Claim 1] The air in the letter chamber of sealing is eliminated. Under the vacuum environment in this chamber In the vacuum-packaging equipment which was made to carry out the seal of the opening of the container which held packaging goods-ed Said read information which reads beforehand the identification information currently recorded on said container by the sensor, and is inputted into central operation part, How to control so that collate the information currently recorded on storage, the storage information corresponding to said identification information is outputted, this print-out and the air pressure eliminated from said chamber are contrasted and the vaccum pressure in a chamber is in agreement with said identification information.

[Claim 2] Inert gas is poured in after eliminating the air in the letter chamber of sealing. Under the inert gas environment in this chamber In the gas package equipment which was made to carry out the seal of the opening of the container which contained packaging goods-ed Said read information which reads beforehand the identification information currently recorded on said container by the sensor, and is inputted into central operation part, How to control so that collate the information currently recorded on storage, the storage information corresponding to said identification information is outputted, this print-out and the pressure in said chamber are contrasted and the inactive-gas-pressure force in a chamber is in agreement with said identification information.

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[Translation done.]



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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] In carrying out a seal package to wrapping being about packaging goods-ed into an airtight sealing chamber, this invention relates to the control approach of setting the gas pressure force, for example, the vacuum pressure, or inactive-gas-pressure force in wrapping as arbitration.

[0002]

[Description of the Prior Art] After surrounding the bag for a package which held packaging goods-ed by the airtight proof-pressure chamber, while carrying out forcible exclusion of the air in said proof-pressure chamber, the vacuum-packaging object commonly referred to as sealing the opening edge of said bag can be formed, and if inert gas is poured in into said bag, a gas package object can be formed. In this case, if vacuum pressure is raised too much beyond the need, the liquid contained in packaging goods-ed within the chamber will boil, the flexible packaging goods-ed inside the package object after seal will be crushed by differential pressure, and, as for the case of a gas package object, the taste of the food in a bag will change with excessive inert gas. Then, he measures the gas pressure force in a proof-pressure chamber with a pressure sensor, and is trying to control the vacuum pressure or gas pressure in a proof-pressure chamber conventionally, as it is also with this pressure sensor.

[0003]

[Problem(s) to be Solved by the Invention] However, in the aforementioned conventional example, there was troublesomeness which must select the set point corresponding to packaging goods-ed whenever it is necessary to adjust the set pressure of a pressure sensor beforehand according to the physical properties of the packaging goods-ed to pack, therefore packaging goods-ed change out of a logbook, and must adjust to a pressure sensor.

[0004]

[Means for Solving the Problem] This invention eliminates the air in the letter chamber of sealing so that a worker may not adjust a pressure sensor each time according to packaging goods-ed. Under the vacuum environment in this chamber In the vacuum-packaging equipment which was made to carry out the seal of the opening of the container which held packaging goods-ed Said read information which reads beforehand the identification information currently recorded on said container by the sensor, and is inputted into central operation part, The information currently recorded on storage is collated, the storage information corresponding to said identification information is outputted, and this print-out and the air pressure eliminated from said chamber are contrasted, and it controls so that the vacuum pressure in a chamber is in agreement with said identification information.

[0005] An option pours in inert gas, after eliminating the air in the letter chamber of sealing. Moreover, under the inert gas environment in this chamber In the gas package equipment which was made to carry out the seal of the opening of the container which contained packaging goods-ed Said read information which reads beforehand the identification information currently recorded on said container by the sensor, and is inputted into central operation part, The information currently recorded on storage is collated, the storage information corresponding to said identification information is outputted, and this print-out and the pressure in said chamber are contrasted, and it controls so that the inactive-gas-pressure force in a chamber is in agreement with said identification information.

[0006]

[Example] The body (12) which can be divided into two, and lid material (13) constitute the chamber (10) shown in drawing 1 from an interface (11). While setting up two pipes (14) and (15) in the shape of a column inside said body

(12) and preparing a movable pawl (16) and (17) at the tip of each [ these ] pipe like drawing 2 , respectively, between the lever (20) which fixed the lower limit of said both pipes (14) and (15) to the inferior surface of tongue of a body (12) in ejection and a lower limit, and (21) is connected through a link (22). Although said movable pawl (16) and (17) carry out a pressure welding to a fixed pawl (23) and (24) with the tensile force of the coil spring (18) which inherits the lever (21) and body (12) by the side of one and edges on both sides in a bag (25) are pinched Making force like an arrow head (27) act on a pin roll (26), a movable pawl (16) and (17) separate from a fixed pawl (23) and (24) by extending a coil spring (18). Moreover, while interposing a universal joint (28) in the middle of the pipe for a clamp by the side of one (15), the shaft for rocking (30) formed in the lower limit of the longwise plate (29) which forms a fixed pawl (24) in upper limit by said universal joint (28) and this heart was supported on the body (12), and the lever (31) is prepared in the outside of this shaft. The opening edge of the upper part in a bag (25) spreads and becomes it tense by leaning a plate (29) by the force of acting on said lever (31), bending a pipe (15) from a universal joint (28), making spacing of both the movable pawl (16) and (17) approach relatively, or detaching it.

[0007] If the body (Rhine (33 connected with the rectangular pipe-like path (32) fixed to the perpendicular wall of 12)) is connected with the pump for vacuums (35) through a solenoid operated directional control valve (34) and a solenoid operated directional control valve (34) is operated by lock out of an electric power switch (39) The air in the letter chamber of sealing (10) is eliminated with said pump (35). A vacuum-packaging object (40) as shown in drawing 5 can be formed by extruding a seal bar (37) in the direction of a seal base (38) with the actuator (36) fixed to the after lid material (13), and carrying out the heating seal of the upper limb opening in a bag (25).

[0008] When having displayed the identification information (41) by a bar code etc. on the front face of the container (25) used as shown in drawing 3 beforehand and controlling the vacuum pressure in a chamber, it can start with reading said identification information (41) with the scanner (42) of drawing 4 . That is, said identification information (41) is recording whenever [ according to a degree of vacuum, restoration volume, etc. corresponding to a class of the packaging goods-ed with which a bag (25) is filled up / control ], whenever the contents of identification information (41) change, it reads the identification information concerned by the scanner sensor (24) beforehand, and it inputs this reading information into central operation part (43). Storage (44) has memorized the information on a large number which assumed control of varieties beforehand, and it collates with the recording information in storage (44), the information corresponding to said identification information (41) is pulled out from storage (44), and it outputs first reading information on the above inputted into central operation part (43) to a control section (45) (46).

[0009] If the bag (25) filled up with packaging goods-ed which are in agreement with said identification information (41) of drawing 3 on the other hand is arranged in the chamber (10) of drawing 1 and the air exclusion in a chamber (10) is started with a pump (35), the pressure sensor (47) supported to lid material will continue sending the pressure value to which it decreases in a chamber gradually to a controller (48). If this controller is equipped with a means (50) to contrast the pressure in the vacuum chamber (10) inputted from a pressure sensor (47), and the information inputted from a control section (45) and its contrast value of this corresponds as shown in drawing 4 , it will cut connection on delivery, a chamber (10), and a pump (34) into a valve (34) for a signal through a vacuum pressure adjustment means (51). That is, since a switch (53) is wide opened with a command signal (52) from a controller (48) in the example of drawing 1 and a change-over valve (34) is changed to a normal condition, the pressure in a chamber (10) stops in the condition of having been in agreement with the identification information displayed on the bag.

[0010] As shown in drawing 1 , the nozzle (56) which passes to a chemical cylinder (55) is provided in the chamber body. If vacuum suction is completed, when a solenoid operated directional control valve (58) will operate close [ of an electric power switch (57) ], the inert gas in a bomb (55) is poured in into a chamber (10). If the identification information (41) of drawing 3 is beforehand read with the scanner (42) of drawing 4 , the gas pressure in a chamber will be controlled in agreement with identification information. That is, when the contrast value of the gas pressure detected by the pressure sensor (59) formed in the chamber (10) and the information sent from a control section (45) like vacuum pressure control is in agreement, connection in a chamber (10) and the source of inert gas (55) is cut as it is also with the signal transmitted to a valve (58) through a gas-pressure-adjusting means (60) from a contrast means (50). That is, in drawing 1 , a switch (63) is wide opened with the command signal (62) from a controller (61), and a solenoid operated directional control valve (58) is changed to a normal condition. By the size of the amount of gas charging to a bag, in order that change may appear in an expansion condition in a bag and the taste of food, adjustment control of the amount of gas charging into the bag (25) of drawing 6 is carried out to said control being.

[0011]

[Effect] Since a pressure-control value is automatically set up compared with the approach of inputting the data selected out of the logbook to the control means of a computer etc. when the identification information currently recorded on the container for a package is read by the sensor in advance of a package, the vacuum pressure or inactive gas pressure which influences said container using this reading information is controlled and the class and the mass of packaging goods-ed change like before, this invention is convenient and can cancel troublesomeness.

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TECHNICAL FIELD

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[Industrial Application] In carrying out a seal package to wrapping being about packaging goods-ed into an airtight sealing chamber, this invention relates to the control approach of setting the gas pressure force, for example, the vacuum pressure, or inactive-gas-pressure force in wrapping as arbitration.

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PRIOR ART

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[Description of the Prior Art] After surrounding the bag for a package which held packaging goods-ed by the airtight proof-pressure chamber, while carrying out forcible exclusion of the air in said proof-pressure chamber, the vacuum-packaging object commonly referred to as sealing the opening edge of said bag can be formed, and if inert gas is poured in into said bag, a gas package object can be formed. In this case, if vaccum pressure is raised too much beyond the need, the liquid contained in packaging goods-ed within the chamber will boil, the flexible packaging goods-ed inside the package object after seal will be crushed by differential pressure, and, as for the case of a gas package object, the taste of the food in a bag will change with excessive inert gas. Then, he measures the gas pressure force in a proof-pressure chamber with a pressure sensor, and is trying to control the vaccum pressure or gas pressure in a proof-pressure chamber conventionally, as it is also with this pressure sensor.

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EFFECT OF THE INVENTION

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[Effect] Since a pressure-control value is automatically set up compared with the approach of inputting the data selected out of the logbook to the control means of a computer etc. when the identification information currently recorded on the container for a package is read by the sensor in advance of a package, the vacuum pressure or inactive gas pressure which influences said container using this reading information is controlled and the class and the mass of packaging goods-ed change like before, this invention is convenient and can cancel troublesomeness.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] However, in the aforementioned conventional example, there was troublesomeness which must select the set point corresponding to packaging goods-ed whenever it is necessary to adjust the set pressure of a pressure sensor beforehand according to the physical properties of the packaging goods-ed to pack, therefore packaging goods-ed change out of a logbook, and must adjust to a pressure sensor.  
[0004]

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MEANS

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[Means for Solving the Problem] This invention eliminates the air in the letter chamber of sealing so that a worker may not adjust a pressure sensor each time according to packaging goods-ed. Under the vacuum environment in this chamber In the vacuum-packaging equipment which was made to carry out the seal of the opening of the container which held packaging goods-ed Said read information which reads beforehand the identification information currently recorded on said container by the sensor, and is inputted into central operation part, The information currently recorded on storage is collated, the storage information corresponding to said identification information is outputted, and this print-out and the air pressure eliminated from said chamber are contrasted, and it controls so that the vacuum pressure in a chamber is in agreement with said identification information.

[0005] An option pours in inert gas, after eliminating the air in the letter chamber of sealing. Moreover, under the inert gas environment in this chamber In the gas package equipment which was made to carry out the seal of the opening of the container which contained packaging goods-ed Said read information which reads beforehand the identification information currently recorded on said container by the sensor, and is inputted into central operation part, The information currently recorded on storage is collated, the storage information corresponding to said identification information is outputted, and this print-out and the pressure in said chamber are contrasted, and it controls so that the inactive-gas-pressure force in a chamber is in agreement with said identification information.

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EXAMPLE

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[Example] The body (12) which can be divided into two, and lid material (13) constitute the chamber (10) shown in drawing 1 from an interface (11). While setting up two pipes (14) and (15) in the shape of a column inside said body (12) and preparing a movable pawl (16) and (17) at the tip of each [ these ] pipe like drawing 2, respectively, between the lever (20) which fixed the lower limit of said both pipes (14) and (15) to the inferior surface of tongue of a body (12) in ejection and a lower limit, and (21) is connected through a link (22). Although said movable pawl (16) and (17) carry out a pressure welding to a fixed pawl (23) and (24) with the tensile force of the coil spring (18) which inherits the lever (21) and body (12) by the side of one and edges on both sides in a bag (25) are pinched Making force like an arrow head (27) act on a pin roll (26), a movable pawl (16) and (17) separate from a fixed pawl (23) and (24) by extending a coil spring (18). Moreover, while interposing a universal joint (28) in the middle of the pipe for a clamp by the side of one (15), the shaft for rocking (30) formed in the lower limit of the longwise plate (29) which forms a fixed pawl (24) in upper limit by said universal joint (28) and this heart was supported on the body (12), and the lever (31) is prepared in the outside of this shaft. The opening edge of the upper part in a bag (25) spreads and becomes it tense by leaning a plate (29) by the force of acting on said lever (31), bending a pipe (15) from a universal joint (28), making spacing of both the movable pawl (16) and (17) approach relatively, or detaching it.

[0007] If the body (Rhine (33 connected with the rectangular pipe-like path (32) fixed to the perpendicular wall of 12)) is connected with the pump for vacuums (35) through a solenoid operated directional control valve (34) and a solenoid operated directional control valve (34) is operated by lock out of an electric power switch (39) The air in the letter chamber of sealing (10) is eliminated with said pump (35). A vacuum-packaging object (40) as shown in drawing 5 can be formed by extruding a seal bar (37) in the direction of a seal base (38) with the actuator (36) fixed to the after lid material (13), and carrying out the heating seal of the upper limb opening in a bag (25).

[0008] When having displayed the identification information (41) by a bar code etc. on the front face of the container (25) used as shown in drawing 3 beforehand and controlling the vacuum pressure in a chamber, it can start with reading said identification information (41) with the scanner (42) of drawing 4. That is, said identification information (41) is recording whenever [ according to a degree of vacuum, restoration volume, etc. corresponding to a class of the packaging goods-ed with which a bag (25) is filled up / control ], whenever the contents of identification information (41) change, it reads the identification information concerned by the scanner sensor (24) beforehand, and it inputs this reading information into central operation part (43). Storage (44) has memorized the information on a large number which assumed control of varieties beforehand, and it collates with the recording information in storage (44), the information corresponding to said identification information (41) is pulled out from storage (44), and it outputs first reading information on the above inputted into central operation part (43) to a control section (45) (46).

[0009] If the bag (25) filled up with packaging goods-ed which are in agreement with said identification information (41) of drawing 3 on the other hand is arranged in the chamber (10) of drawing 1 and the air exclusion in a chamber (10) is started with a pump (35), the pressure sensor (47) supported to lid material will continue sending the pressure value to which it decreases in a chamber gradually to a controller (48). If this controller is equipped with a means (50) to contrast the pressure in the vacuum chamber (10) inputted from a pressure sensor (47), and the information inputted from a control section (45) and its contrast value of this corresponds as shown in drawing 4, it will cut connection on delivery, a chamber (10), and a pump (34) into a valve (34) for a signal through a vacuum pressure adjustment means (51). That is, since a switch (53) is wide opened with a command signal (52) from a controller (48) in the example of drawing 1 and a change-over valve (34) is changed to a normal condition, the pressure in a chamber (10) stops in the

condition of having been in agreement with the identification information displayed on the bag.

[0010] As shown in drawing 1, the nozzle (56) which passes to a chemical cylinder (55) is provided in the chamber body. If vacuum suction is completed, when a solenoid operated directional control valve (58) will operate close [ of an electric power switch (57) ], the inert gas in a bomb (55) is poured in into a chamber (10). If the identification information (41) of drawing 3 is beforehand read with the scanner (42) of drawing 4, the gas pressure in a chamber will be controlled in agreement with identification information. That is, when the contrast value of the gas pressure detected by the pressure sensor (59) formed in the chamber (10) and the information sent from a control section (45) like vacuum pressure control is in agreement, connection in a chamber (10) and the source of inert gas (55) is cut as it is also with the signal transmitted to a valve (58) through a gas-pressure-adjusting means (60) from a contrast means (50). That is, in drawing 1, a switch (63) is wide opened with the command signal (62) from a controller (61), and a solenoid operated directional control valve (58) is changed to a normal condition. By the size of the amount of gas charging to a bag, in order that change may appear in an expansion condition in a bag and the taste of food, adjustment control of the amount of gas charging into the bag (25) of drawing 6 is carried out to said control being.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The sectional view of side view.

[Drawing 2] The front view of the body of front drawing.

[Drawing 3] The front view of a container.

[Drawing 4] The explanatory view by the block diagram.

[Drawing 5] The explanatory view of a vacuum-packaging object.

[Drawing 6] Gas package object explanatory view.

[Description of Notations]

(10) -- Chamber (25) -- Bag (34) -- Solenoid operated directional control valve (35) -- Pump  
(37) -- Seal bar (41) -- Identification information (42) -- Scanner (43) -- Central operation part (44) -- Storage (45) --  
Control section (47) -- Pressure sensor (48) -- Controller (50) -- Contrast means (51) -- Vacuum pressure adjustment  
means  
(55) -- Chemical cylinder (58) -- Solenoid operated directional control valve (59) -- Pressure sensor (60) -- Gas-  
pressure-adjusting means (61) -- Controller

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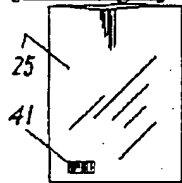
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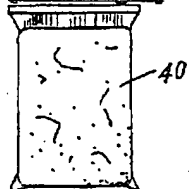
DRAWINGS

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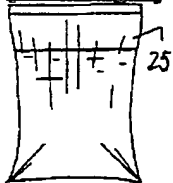
[Drawing 3]



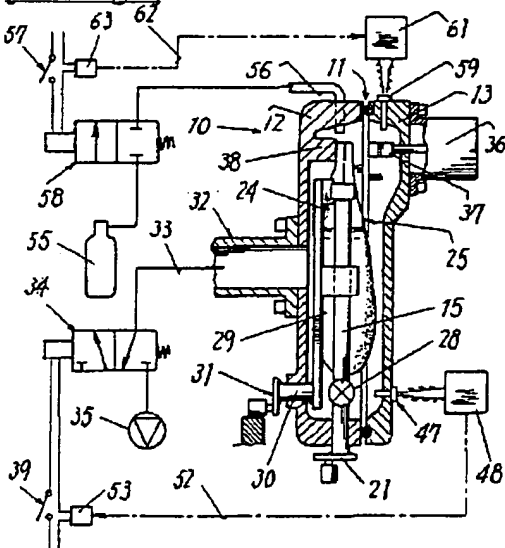
[Drawing 5]



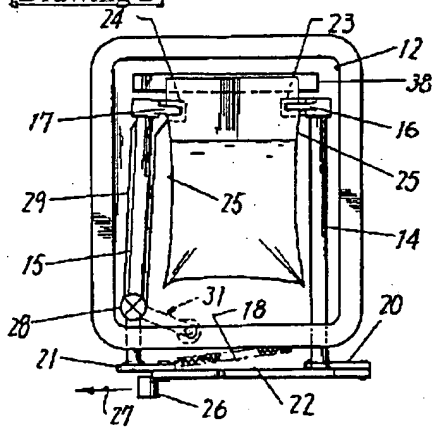
[Drawing 6]



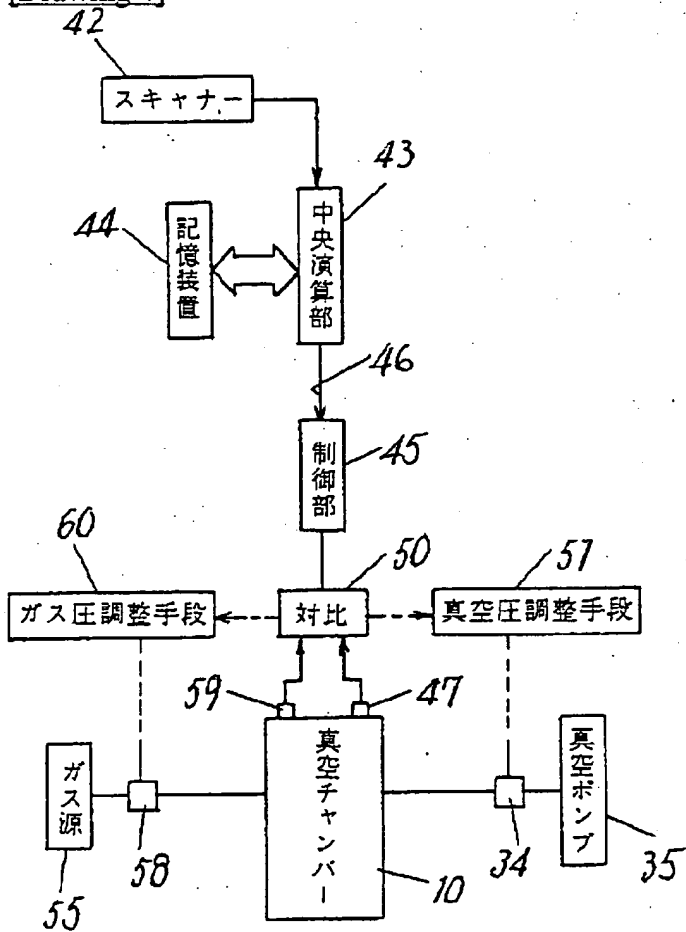
[Drawing 1]



[Drawing 2]



[Drawing 4]



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CORRECTION OR AMENDMENT

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[Kind of official gazette] Printing of amendment by the convention of 2 of Article 17 of Patent Law  
[Section partition] The 6th partition of the 2nd section  
[Publication date] March 21, Heisei 13 (2001. 3.21)

[Publication No.] JP,7-61419,A  
[Date of Publication] March 7, Heisei 7 (1995. 3.7)  
[Annual volume number] Open patent official report 7-615  
[Application number] Japanese Patent Application No. 5-235487  
[The 7th edition of International Patent Classification]

B65B 31/02  
57/00

[FI]

B65B 31/02  
57/00 A

[Procedure revision]  
[Filing Date] July 5, Heisei 12 (2000. 7.5)  
[Procedure amendment 1]  
[Document to be Amended] Specification  
[Item(s) to be Amended] Claim  
[Method of Amendment] Modification  
[Proposed Amendment]  
[Claim(s)]

[Claim 1] The pressure-control approach that a controller acts so that the air in the letter chamber of sealing may be eliminated, the identification information which is vacuum-packaging equipment which was made to carry out the seal of the opening of the container which held packaging goods-ed under the vacuum environment in this chamber, and is displayed on said container may be read by the sensor and this reading information and the vacuum value in said vacuum chamber may be in agreement.

[Claim 2] The process which reads the identification information which recorded the control performed as it is also with a controller on said container so that reading information and the vacuum value in a vacuum chamber might be in agreement by the sensor, and is inputted into central operation part, The process which collates said input and the information currently recorded on storage in said central operation part, and outputs the storage information corresponding to said input, The control approach according to claim 1 performed according to the process which cuts air exclusion when said print-out and the change pressure value in said chamber accompanying air exclusion are contrasted and the vacuum pressure within a chamber is in agreement with said identification information.

[Claim 3] The pressure-control approach that a controller acts so that inert gas may be poured in after eliminating the air in the letter chamber of sealing, the identification information which is vacuum-packaging equipment which was

made to carry out the seal of the opening of the container which held packaging goods-ed under the inert gas environment in this chamber, and is displayed on said container may be read by the sensor and this reading information and the inactive-gas-pressure value in said vacuum chamber may be in agreement.

[Claim 4] The pressure-control approach according to claim 3 characterized by providing the following Reading information The process which reads the identification information which recorded the control performed as it is also with a controller on the container so that the inactive-gas-pressure value in a vacuum chamber might be in agreement by the sensor, and is inputted into central operation part It sets to said central operation part, and is said input. The process which cuts inert gas impregnation when the process which collates the information currently recorded on storage and outputs the storage information corresponding to said input, said print-out, and the change pressure value in said chamber accompanying inert gas impregnation are contrasted and the inactive-gas-pressure force within a chamber is in agreement with said identification information

[Procedure amendment 2]

[Document to be Amended] Specification

[Item(s) to be Amended] 0009

[Method of Amendment] Modification

[Proposed Amendment]

[0009] If the bag 25 filled up with packaging goods-ed which are in agreement with said identification information 41 of drawing 3 on the other hand is arranged in the chamber 10 of drawing 1 and the air exclusion in a chamber 10 is started with a pump 35, the pressure sensor 47 supported to lid material will continue sending the pressure value to which it decreases in a chamber gradually to a controller 48. If this controller is equipped with a means 50 to contrast the pressure in the vacuum chamber 10 inputted from a pressure sensor 47, and the information inputted from a control section 45 and its contrast value of this corresponds as shown in drawing 4, it will cut connection on delivery, a chamber 10, and a pump 35 into a valve 34 for a signal through the vacuum pressure adjustment means 51. That is, since a switch 53 is wide opened with a command signal 52 from a controller 48 in the example of drawing 1 and a change-over valve 34 is changed to a normal condition, the pressure in a chamber 10 stops in the condition of having been in agreement with the identification information displayed on the bag.

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[Translation done.]